



ABSTRACT

While post-stroke depression (PSD) is a common sequelae of stroke, many stroke survivors also have expressive aphasia (i.e., the inability to produce spoken or written language), which limits or prevents treating depression with talk psychotherapy. Unlike most psychotherapy modalities, eye movement desensitization and reprocessing (EMDR) does not require extensive verbal communication to therapists, which might make EMDR an ideal treatment modality for aphasic patients with mental health concerns. The authors present the first known case reporting EMDR in aphasia, describing the treatment of a 50-year-old woman with a history of depression following a left middle cerebral artery stroke. Left frontal lobe strokes are independently associated with both PSD and expressive aphasia. EMDR began two years following the stroke, at which point the patient continued to have persistent expressive aphasia despite previously completing more than a year of speech therapy. Using the Blind to Therapist Protocol, EMDR successfully led to improvement in depressive symptoms and, surprisingly, improvement in aphasia. This case report suggests that EMDR might be beneficial for those with mental health concerns who have expressive communication impairments that might prevent treatment with other psychotherapy modalities. We discuss potential challenges and technical workarounds with EMDR in aphasia, we speculate about potential biopsychosocial explanations for our results, and we recommend future research on EMDR for PSD and other mental health concerns in the context of aphasia, as well as possibly for aphasia itself.

Keywords: Stroke, aphasia, depression, EMDR, psychotherapy

Wants Talk Psychotherapy but Cannot Talk: EMDR for Post-stroke Depression with Expressive Aphasia

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Among stroke survivors, 35 percent develop expressive and/or receptive aphasia, 30 percent develop post-stroke depression (PSD), and seven percent complete suicide.^{1,2} Treating PSD is important because of increased risks for all-cause mortality, suicide, recurrent stroke, and worse neurological recovery.^{2–7} While studies have indicated that antidepressants and psychotherapy are effective for PSD,^{2,3,8} psychotherapy options are very limited for those with comorbid aphasia. Only a few studies/cases have been reported demonstrating positive results with behavioral therapy,⁹ counseling¹⁰ and family therapy.¹¹ Although the ability to communicate is generally considered a prerequisite for psychotherapy, verbal expression of information is not necessary for eye movement desensitization and reprocessing (EMDR) to be successful.¹²

EMDR is a psychotherapy that uses, among other techniques, alternating bilateral stimulation (BLS; e.g., eye movement, auditory, tactile) while patients internally attend to memories, emotions, cognitions, images, and bodily sensations. The blind to therapist (B2T) protocol¹³ was developed for those unwilling/unable to describe memories during EMDR due to control, shame/embarrassment, cultural reasons, or language barriers. Though EMDR is effective for depression,^{14–16} PubMed, PsycINFO, EMDRIA, and Ingenta Connect searches did not reveal any articles about EMDR in those with comorbid aphasia. We aimed to determine if our patient with PSD could benefit from EMDR despite severe expressive aphasia.

CASE REPORT

Participant. Written consent for this case report was obtained from the patient, who has been anonymized. “Philomela,” a 50-year-old right-handed woman with depression onset after stroke—and no evidence of prior psychiatric symptoms—suffered a left middle cerebral artery stroke resulting in hemiplegia and Broca’s aphasia (both implicating frontal lobe). Based on formal speech pathology assessment, she had severely impaired functional spontaneous language skills and written expression and moderately impaired reading and auditory comprehension. Meeting a certified speech-language pathologist 2 to 3 times weekly for seven months, her comprehension difficulties were nearly resolved. However, severe expressive deficits, being wheel-chair bound, anhedonia, and hopelessness led to social withdrawal and dropping out of speech, physical, and occupational therapies.

At her first psychiatric appointment—10 months post-stroke—Philomela was dysphoric and mostly used head nods/shakes to communicate with rare “yes”/“no” answers. We discussed diet, exercise, social activity, antidepressants, stroke support groups, and restarting stroke-related therapies. Escitalopram was prescribed because serotonergic antidepressants have been shown to improve PSD and post-stroke neurological recovery² and low anti-cholinergic effects, which can potentially worsen neurological deficits compared to others.^{17,18} Within weeks,

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TABLE 1. Patient's improvement in SUD (0–10), VOC (1–7), Body Scan (+ = positive for bodily sensations; - = clear body scan), and PHQ-9 (0–27)

EVENT/SCALE	ASSESSMENT	SESSION 1	SESSION 2	SESSION 3	SESSION 4	SESSION 5
1 SUD	9	3	1	0	-	-
VOC	2	-	-	7	-	-
Body Scan	+	-	-	-	-	-
2 SUD	7	-	-	-	0	-
VOC	4	-	-	-	7	-
Body Scan	+	-	-	-	-	-
3 SUD	3	-	-	-	-	0
VOC	6	-	-	-	-	7
Body Scan	+	-	-	-	-	-
PHQ-9 (severity of depression)	24 (severe)	-	-	-	-	5 (minimal)

SUD: Subjective Units of Disturbance; VOC: Validity of Cognition; PHQ-9: Patient Health Questionnaire

Philomela resumed socializing and stroke-related therapies (including 7 more months of speech therapy, which resulted in some improvement in using a speech-generating device), but she continued to experience severe expressive aphasia. However, depression insidiously returned, culminating in a serious suicide attempt. Bupropion was started to augment escitalopram and because it lacks anticholinergic activity. This resulted in modest improvements. Additional therapies (e.g., psychotherapy, music, art, yoga, cognitive rehabilitation) were recommended but difficult to find or inappropriate due to limitations, so EMDR was suggested.

Measures. All measures were clinician-administered due to aphasia. Depression severity was assessed using the Patient Health Questionnaire (PHQ-9), a commonly used 0 to 27 scale. EMDR's standard assessment tools assessed progress: Subjective Units of Disturbance (SUD), a 0 to 10 scale with 10 indicating the worst distress; Validity of Cognition (VOC), a 1 to 7 scale with 7 indicating the strongest belief in a positive cognition; and Body Scan, which systematically attends to body parts for sensations.

Treatment. EMDR began 24 months post-stroke with weekly one-hour sessions. The first three sessions involved history-taking, preparation/education, and assessment

(identifying images, positive/negative cognitions, emotions, VOC, SUD, and bodily sensations associated with target memories). These were greatly aided by her husband (whom she requested to be at all sessions) and with lists of cognitions/emotions. She selected three target events to process using desensitization (reducing distress with sets of BLS) with cognitive interweaves (brief clinician statements/questions between BLS), and installation (enhancing positive self-referencing beliefs using BLS).

Using a biopsychosocial formulation based on history-taking/assessment, the clinician generally could hone guesses that Philomela would confirm/deny. It was important not to rush offering alternatives even after an emotion/cognition was agreed with (i.e., she would often identify better words to describe what she was feeling/thinking). Nevertheless, occasionally Philomela's thoughts could not be communicated/guessed. Two target memories were identified—stroke and suicide attempt—but a third event remained elusive, even after listing potential traumas/stressors and administering the Adverse Childhood Experience Questionnaire.¹⁹ The unidentified event was narrowed to occurring “25 years ago,” which became its cue phrase. It was harder to guess related cognitions/emotions, but she acknowledged having the words in her mind

that could be cued (e.g., “negative belief”).

As recommended in B2T, where the therapist cannot assess “change,” Philomela was taught the nature of change in EMDR and was instructed to use nods/shakes or yes/no similar to a case report involving stuttering.¹² Desensitization was initially difficult: she required frequent reminders about the nature of change, feedback was often stalled by aphasia, and it became clear that high numbers of rapid BLS passes were necessary for change (she reported no change with too slow/few, 50 were generally sufficient following positive changes, but 100 were needed otherwise). When she could not verbalize feedback, she was reassured that EMDR can work even with internal processing without the clinician knowing specifics. Gradually, the process became more familiar, and the clinician became more attuned, leading to better guesses. A workable pattern developed in which the following steps were repeated again and again:

1. BLS
2. Deep breath
3. Time to respond
4. If unable to verbalize, “is it a feeling? . . . thought? . . . image? . . . or body sensation?”
5. “Is it positive or negative?”
6. Clinician guesses
7. Whether or not the change could be identified, BLS resumed +/- cognitive interweave.

Results. Table 1 displays how the rate of progress improved exponentially, resulting in improved depression. When processing stalled, cognitive interweaves became very effective (e.g., “Can someone require a lot of help and still be a worthwhile person?”; “If your child was in a wheelchair, would you still think they were a worthwhile person?”; “Even if your stroke symptoms never improve can you still live a good life?”; “Can you have physical limitations and still be loved and important to others?”). Philomela often gave surprisingly negative responses to cognitive interweaves, but with continued BLS and returns to target, positive changes eventually occurred and became sustained. At four months post-EMDR, depression remained remitted with her return to a full social life and enjoyable activities, reinventing her life within her physical/speech limitations

While our target had been depression, there were subjective (i.e., reported by patient, family, and clinician) improvements in aphasia, initiation, and verbal apraxia. She started using multisyllabic words (e.g., “heaviness,” “positive,” “emotional,” and “contentment,” the latter being said without first being said by the clinician, astounding herself and her husband), verbalized things the clinician had been unable to guess (e.g., the third event) and, in her last session, she said her husband’s name for the first time in two years. He admitted being skeptical of EMDR originally but happily said, “she made more progress in two months with this than in over a year of speech therapy.”

DISCUSSION

In Greek mythology, Philomela was raped and her tongue was cut out to keep her silent. Rendered unable to speak, she wove a tapestry of her story and was turned into a nightingale by the gods to escape her tormentor (while male nightingales sing, females are mute). Like the Greek Philomela, our case involved a woman who was rendered unable to speak. Through EMDR, she was able to process her story nonverbally and was able to take flight into a worthwhile life.

While known to be effective for depression, we can only speculate how EMDR helped this specific patient. EMDR activates the frontal lobe,^{20,21} which might explain its utility for PSD and, perhaps, the surprising improvement in aphasia. Stress-induced deactivation in Broca’s area has been repeatedly implicated in the difficulty that trauma survivors have when discussing traumas.^{22–25} It is conceivable that EMDR and antidepressants enhanced frontal lobe activation and neuroplasticity.

Table 2 summarizes considerations for EMDR with aphasia. Anticipatable issues include regularly explaining change, trouble identifying cognitions, and more time needed in all phases. While initially distracting, the husband’s presence was likely beneficial as he provided collateral information, improved guesses, and was able to bear witness to her struggles and successes. Helpful preparation included consultation, literature searches, and organizing visual scales and lists of emotions/cognitions. It should be noted that our patient had only expressive aphasia, as her comprehension issues had been successfully treated by a speech-language pathologist;

TABLE 2. EMDR phases with recommendations for aphasia patients

General	<ul style="list-style-type: none"> • Empathize and reassure patient about speech limitations and EMDR • Establish safe and non-judgmental setting regarding speech limitations • Build rapport by normalizing common feelings associated with aphasia • Emphasize collaborative process to problem solve and communicate • Encourage/praise verbalizing but reassure/move on when unable to verbalize • Use closed-ended questions to speculate and deduce patient’s thoughts • Supply likely emotions and cognitions based on formulation and assessment • Guess by following the affect, and looking for themes or incongruences • Expect a slow process and take all the time that is necessary
History taking	<ul style="list-style-type: none"> • Determine communication capabilities, and factors that may help or worsen • Determine memory, attention or other deficits that may impact treatment • Determine realistic prognosis of stroke-related deficit recovery • Obtain collateral history from trusted friends/family with patient permission • Utilize validated questionnaires to illicit unapparent symptoms/history • Develop a coherent formulation of symptoms and underlying factors
Preparation	<ul style="list-style-type: none"> • Educate about nature of change and self-assessment of change • Agree upon verbal and non-verbal signals for change • Determine if motor/sensory deficits could impede bilateral stimulation • Consider use of communication devices, pictures or symbols
Assessment	<ul style="list-style-type: none"> • Educate the difference between emotions, cognitions, sensations and images • Utilize lists of emotions and cognitions to improve guessing • Agree upon cue words/phrases for thoughts that cannot be verbalized • Use visual scales for SUD and VOC
Desensitization/ Installation/ Body Scan	<ul style="list-style-type: none"> • Empower patient-centered setting • Patient may require slower or faster passes depending on deficits • Check-in about level of arousal since affect may be masked by motor deficits • Continuously educate about nature of change and self-assessment of change • Utilize lists to help deduce blocking beliefs • Utilize formulation to target cognitive interweaves • Use closed-ended Socratic questions • Consider stroke-related ecological validity (e.g., realistic expectations about full neurological recovery, body sensations that are unlikely to resolve)
Closure	<ul style="list-style-type: none"> • Summarize changes • Debrief about patient experience using closed-ended questions • Validate/affirm/reinforce strengths and gains • Consider ending with safe place (which requires no verbalization)
Reevaluation	<ul style="list-style-type: none"> • Determine if memory deficits necessitate repeating past processing

EMDR: Eye Movement Desensitization and Reprocessing; SUD: Subjective Units of Disturbance; VOC: Validity of Cognition

EMDR might lack utility for those with receptive aphasia.

As a single case report, further research is required to determine EMDR efficacy for mental disorders with comorbid aphasia. Not expecting speech improvements, we did not use objective measures as we did with depression, so the aphasia findings are anecdotal. It is possible that aphasia seemed to improve because the therapist became

more familiar with her, or only secondary to reduced depression (e.g., perhaps it was not the “aphasia” that improved but rather the patient’s ability to connect with others due to remission of depression), or that symptoms improved because of the husband’s presence (e.g., his attention helped lift her depression), but the clinical observations warrant further research. Irrespective of aphasia, this study indicates that EMDR can be effective for PSD

despite comorbid aphasia and that these patients have more treatment options than previously thought.

CONCLUSION

This is the first reported case demonstrating that EMDR can be effective for depression, even in those with severe expressive aphasia. In our case, there was no reluctance to disclose information, simply a neurological inability to do so. Through preparation, patience, perseverance, and plasticity (clinician flexibility, though perhaps also neuroplasticity), the patient's PSD gradually improved, and she was able to reinvent her life within her limitations.

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